



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of:

Aravinda KORALA

Serial No.: 09/646,796

Filed: November 21, 2000

Art Unit: 3691

Examiner: Lalita HAMILTON

For: **APPARATUS AND METHOD FOR
PROVIDING TRANSACTION SERVICES**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. §1.192

Sir:

This is an appeal pursuant to 35 U.S.C. 134 from the Examiner's decision rejecting claims
114 - 184 as set forth in the final Office Action dated January 7, 2009.

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I. Real party in interest.

The applicant is the real party in interest.

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II. Related appeals and interferences.

None.

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III. Status of claims.

Claims 114-184 stand finally rejected by the Examiner and are the subject of the appeal.

Claims 1-113 were cancelled.

IV. Status of amendments.

An Amendment Under 37 CFR 1.116 was filed on February 3, 2009, after the final rejection. The Examiner has not indicated whether or not the Amendment would be entered for purposes of appeal. However, the only amendment in the Amendment Under 37 CFR 1.116, an amendment to the specification, was in partial response to a rejection under 35 USC 112 that the Examiner withdrew in the Advisory Action.

V. Summary of claimed subject matter.

There are four independent claims: claims 114, 147, 183 and 184. Claims 114 and 183 are drawn, respectively, to a method for controlling an ATM or kiosk and to a method for providing transaction services in an ATM or Kiosk. Claims 147 and 184 are drawn to an ATM or kiosk. Claims 115-146 and 178-181 depend, at least ultimately, on claim 114, and claims 148-177 and 182 depend, at least ultimately, on claim 147.

Independent claim 114

Independent claim 114 recites: A method for controlling an ATM or kiosk (page 1, lines 3-22 of the specification; page 7, line 34 – page 8, line 17; page 13, lines 26-29; Fig. 4), comprising the steps of:

providing an embedded software application at the ATM or kiosk (page 4, lines 24-29; page 13, lines 27-29; page 14, lines 25-27; Fig. 4);

providing at least one device of at least one device type at the ATM or kiosk (page 2, line 30 – page 3, line 1; page 17, lines 5-11; page 17, line 15 – page 18, line 8; page 19, lines 25-34; claim 34 of the Preliminary Amendment filed with the original US application papers);

providing middleware software (page 4, lines 24-35; page 7, line 34 – page 8, line 17; page 15, lines 16-24) at the ATM or kiosk for interfacing the application with the at least one device, wherein the middleware comprises a software component for each device type (page 7, lines 9-13; page 8, lines 19-21; page 15, lines 16-28) each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for (page 8, lines 8-13; page 16, lines 6-10; page 16, line 27 – page 17, line 3; page 17, line 5 – page 18, line 8; page 19, lines 25-34); and

controlling within the ATM or kiosk by the software application, through each

component, devices belonging to the device type that the component is for, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices (page 4, line 24 – page 5, line 4; page 8, lines 4-13; page 13, line 34 – page 14, line 2; page 14, lines 25 -27).

Independent claim 147

Independent claim 147 recites: An ATM or kiosk comprising:

an embedded software application (page 4, lines 24-29; page 13, lines 27-29; page 14, lines 25-27; Fig. 4);

at least one device of at least one device type (page 2, line 30 – page 3, line 1; page 17, lines 5-11; page 17, line 15 – page 18, line 8; page 19, lines 25-34; claim 34 of the Preliminary Amendment filed with the original US application papers); and

middleware software adapted to interface the application with the at least one device (page 4, lines 24-35; page 7, line 34 – page 8, line 17; page 15, lines 16-24), the middleware software comprising a software component for each device type (page 7, lines 9-13; page 8, lines 19-21; page 15, lines 16-28), each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for (page 8, lines 8-13; page 16, lines 6-10; page 16, line 27 – page 17, line 3; page 17, line 5 – page 18, line 8; page 19, lines 25-34), each component being adapted to control devices belonging to the device type that the software component is for within the ATM or kiosk by the software application, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices (page 4, line 24 – page 5, line 4; page 8, lines 4-13; page 13, line 34 – page 14, line 2; page 14, lines 25 -27).

Independent claim 183

Independent claim 183 recites: A method for providing transaction services in an ATM or Kiosk having at least one transaction device of at least one transaction device type (page 2, line 30 – page 3, line 1; page 17, lines 5-11; page 17, line 15 – page 18, line 8; page 19, lines 25-34; claim 34 of the Preliminary Amendment filed with the original US application papers), the at least one transaction device having capabilities, comprising the steps of:

controlling said ATM or Kiosk by at least one software application and an operating system, both of which are installed in the ATM or Kiosk (page 4, line 24 – page 5, line 8; page 8, lines 4-13; page 13, line 34 – page 14, line 2; page 14, lines 25 -27);

wherein the at least one software application interacts with said at least one transaction device of said transaction device type through a programming interface of middleware software comprising transaction objects providing transaction services (page 1, lines 3-21; page 4, line 24 – page 5, line 8; page 15, lines 21-24); and

wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device (page 8, lines 8-13; page 19, lines 25-34).

Independent claim 184

Independent claim 184 recites: An ATM or Kiosk comprising

at least one transaction device of at least one transaction device type (page 2, line 30 – page 3, line 1; page 17, lines 5-11; page 17, line 15 – page 18, line 8; page 19, lines 25-34; claim 34 of the Preliminary Amendment filed with the original US application papers);

at least one software application and an operating system installed in the ATM or Kiosk, the at least one software application and the operating system controlling and receiving information from said at least one transaction device type (page 4, line 24 – page 5, line 8; page 8, lines 4-13; page 13, line 34 – page 14, line 2; page 14, lines 25 -27);

a programming interface of middleware software through which the at least one software application and the operating system control and receive information from said at least one transaction device type, wherein the programming interface of middleware software comprises transaction objects providing transaction services (page 1, lines 3-21; page 4, line 24 – page 5, line 8; page 15, lines 21-24), wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device (page 8, lines 8-13; page 19, lines 25-34).

Dependent claim 115

Dependent claim 115 depends on claim 114 and recites providing the ATM or kiosk with a data communications interface over which said ATM or kiosk communicates (page 11, lines 2-4; claim 35 of the Preliminary Amendment filed with the original US application papers).

Dependent claim 116

Dependent claim 116 depends on claim 114 and recites that the software component is for performing standardized device functions (claim 37 of the Preliminary Amendment).

Dependent claim 117

Dependent claim 117 depends on claim 116 and recites providing the ATM or kiosk with a customizable user interface (claim 38 of the Preliminary Amendment).

Dependent claim 118

Dependent claim 118 depends on claim 117 and recites that the software component is independent of the user interface (claim 39 of the Preliminary Amendment).

Dependent claim 119

Dependent claim 119 depends on claim 118 and recites providing the ATM or kiosk with a plurality of software components, at least one of which comprises a capabilities interface (claim 40 of the Preliminary Amendment).

Dependent claim 120

Dependent claim 120 depends on claim 119 and recites that the capabilities interface communicates the capabilities of the software component (claim 41 of the Preliminary Amendment).

Dependent claim 121

Dependent claim 121 depends on claim 119 and recites that the application and the software components are concurrently operable (claim 42 of the Preliminary Amendment).

Dependent claim 122

Dependent claim 122 depends on claim 116 and recites that the software component is constructed with an event generating capability and that the software component is operable in a

selectable mode in which events are queued up and delivered to the application on demand (claim 43 of the Preliminary Amendment).

Dependent claim 123

Dependent claim 123 depends on claim 114 and recites that the middleware software provides service in accordance with at least one software standard for interacting with different hardware systems (claim 44 of the Preliminary Amendment).

Dependent claim 124

Dependent claim 124 depends on claim 123 and recites that the at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND®, ActiveX®, Javabeans, SNMP (claim 45 of the Preliminary Amendment).

Dependent claim 125

Dependent claim 125 depends on claim 114 and recites that all errors and transgressions are asserted by the middleware software (claim 46 of the Preliminary Amendment).

Dependent claim 126

Dependent claim 126 depends on claim 114 and recites the step of the middleware software writing trace data to memory and then copying the trace data to disk only when the ATM or kiosk is idle (claim 47 of the Preliminary Amendment).

Dependent claim 127

Dependent claim 127 depends on claim 114 and recites providing the ATM or kiosk with a web browser (claim 48 of the Preliminary Amendment).

Dependent claim 128

Dependent claim 128 depends on claim 127 and recites that the ATM/kiosk control application is operable from within the environment of said web browser (claim 49 of the

Preliminary Amendment).

Dependent claim 129

Dependent claim 129 depends on claim 128 and recites that the web browser provides support for software distribution (claim 50 of the Preliminary Amendment).

Dependent claim 130

Dependent claim 130 depends on claim 128 and recites that the at least one software component is contained in a web browser frame provided at the ATM or kiosk and that the at least one software component is operable to detect events which must be responded to upon occurrence (claim 51 of the Preliminary Amendment).

Dependent claim 131

Dependent claim 131 depends on claim 127 and recites that the middleware software comprises a plurality of COM components having a scriptable ActiveX® interface (claim 52 of the Preliminary Amendment).

Dependent claim 132

Dependent claim 132 depends on claim 127 and recites that the middleware software comprises a plurality of Javabeans™ components having a scriptable interface (claim 53 of the Preliminary Amendment).

Dependent claim 133

Dependent claim 133 depends on claim 127 and recites that the web browser communicates with conventional web sites to be displayed by the ATM or kiosk (claim 54 of the Preliminary Amendment).

Dependent claim 134

Dependent claim 134 depends on claim 127 and recites that the middleware software

allows or disallows access to particular web sites according to a rule database (claim 55 of the Preliminary Amendment).

Dependent claim 135

Dependent claim 135 depends on claim 127 and recites that the middleware software customizes time-out of the display of individual internet web sites (claim 56 of the Preliminary Amendment).

Dependent claim 136

Dependent claim 136 depends on claim 114 and recites that the ATM or kiosk enables the software application and middleware to be altered across a network by an authority (claim 57 of the Preliminary Amendment).

Dependent claim 137

Dependent claim 137 depends on claim 114 and recites that the ATM or kiosk communicates status information to a remote station (claim 58 of the Preliminary Amendment).

Dependent claim 138

Dependent claim 138 depends on claim 114 and recites that the at least one software component encapsulates software logic required for performing at least a portion of a transaction (claim 59 of the Preliminary Amendment).

Dependent claim 139

Dependent claim 139 depends on claim 114 and recites that the at least one software component provides abstraction of details of a device controlled by said software component (claim 60 of the Preliminary Amendment).

Dependent claim 140

Dependent claim 140 depends on claim 114 and recites the step of creating a separate

thread for each of a plurality of software components (claim 61 of the Preliminary Amendment).

Dependent claim 141

Dependent claim 141 depends on claim 115 and recites the step of enabling the software application to communicate over the communications interface through a software component (claim 62 of the Preliminary Amendment).

Dependent claim 142

Dependent claim 142 depends on claim 116 and recites that the at least one of said software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server (claim 63 of the Preliminary Amendment).

Dependent claim 143

Dependent claim 143 depends on claim 114 and recites that the middleware software provides generic error handlers (claim 64 of the Preliminary Amendment).

Dependent claim 144

Dependent claim 144 depends on claim 115 and recites configuring a plurality of ATMs or kiosks, and wherein configuration data for said step of configuring is centrally held in a distribution file (claim 65 of the Preliminary Amendment).

Dependent claim 145

Dependent claim 145 depends on claim 117 and recites the step of constructing the user interface using common web authoring tools (claim 66 of the Preliminary Amendment).

Dependent claim 146

Dependent claim 146 depends on claim 114 and recites that the software application runs on a Microsoft Windows NT operating system (claim 67 of the Preliminary Amendment).

Dependent claim 148

Dependent claim 148 depends on claim 147 and recites a data communications interface wherein the ATM or Kiosk is adapted to communicate over the data communications interface (claim 69 of the Preliminary Amendment).

Dependent claim 149

Dependent claim 149 depends on claim 147 and recites that the software components are for performing standardized device functions (claim 71 of the Preliminary Amendment).

Dependent claim 150

Dependent claim 150 depends on claim 149 and recites a customizable user interface (claim 72 of the Preliminary Amendment).

Dependent claim 151

Dependent claim 151 depends on claim 150 and recites that the software components are independent of the user interface (claim 73 of the Preliminary Amendment).

Dependent claim 152

Dependent claim 152 depends on claim 151 and recites a plurality of software components, at least one of which comprises a capabilities interface (claim 74 of the Preliminary Amendment).

Dependent claim 153

Dependent claim 153 depends on claim 152 and recites that the capabilities interface can communicate the capabilities of the software component (claim 75 of the Preliminary Amendment).

Dependent claim 154

Dependent claim 154 depends on claim 152 and recites that the software application and

the software components are concurrently operable (claim 76 of the Preliminary Amendment).

Dependent claim 155

Dependent claim 155 depends on claim 147 and recites that the software component is constructed with an event generating capability and that the software component is operable in a selectable mode in which events are queued up and delivered to the application on demand (claim 77 of the Preliminary Amendment).

Dependent claim 156

Dependent claim 156 depends on claim 147 and recites that the middleware software is adapted to provide service in accordance with at least one software standard for interacting with different hardware systems (claim 78 of the Preliminary Amendment).

Dependent claim 157

Dependent claim 157 depends on claim 156 and recites that the at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND, ActiveX®, Javabeans, SNMP (claim 79 of the Preliminary Amendment).

Dependent claim 158

Dependent claim 158 depends on claim 147 and recites that the ATM/kiosk control application is operable from within a web browser environment (claim 83 of the Preliminary Amendment).

Dependent claim 159

Dependent claim 159 depends on claim 158 and recites that a web browser provides support for software distribution (claim 84 of the Preliminary Amendment).

Dependent claim 160

Dependent claim 160 depends on claim 158 and recites a web browser frame containing

at least one software component operable to detect events which must be responded to upon occurrence (claim 85 of the Preliminary Amendment).

Dependent claim 161

Dependent claim 161 depends on claim 147 and recites that the middleware software comprises a plurality of COM components having a scriptable ActiveX® interface (claim 86 of the Preliminary Amendment).

Dependent claim 162

Dependent claim 162 depends on claim 147 and recites that the middleware software comprises a plurality of Javabeans™ components having a scriptable interface (claim 87 of the Preliminary Amendment).

Dependent claim 163

Dependent claim 163 depends on claim 147 and recites a web browser adapted to communicate with conventional web sites to be displayed by the ATM or Kiosk (claim 88 of the Preliminary Amendment).

Dependent claim 164

Dependent claim 164 depends on claim 147 and recites that the ATM or kiosk is adapted to allow the ATM/kiosk software application and middleware to be altered across a network by an authority (claim 91 of the Preliminary Amendment).

Dependent claim 165

Dependent claim 165 depends on claim 147 and recites that the ATM or kiosk is adapted to communicate status information to a remote station (claim 92 of the Preliminary Amendment).

Dependent claim 166

Dependent claim 166 depends on claim 147 and recites that the at least one software

component encapsulates software logic required for performing at least a portion of a transaction (claim 93 of the Preliminary Amendment).

Dependent claim 167

Dependent claim 167 depends on claim 152 and recites that the at least one software component provides abstraction of details of a device controlled by said software component (claim 94 of the Preliminary Amendment).

Dependent claim 168

Dependent claim 168 depends on claim 152 and recites that each of a plurality of the software components comprises means for creating a separate thread (claim 95 of the Preliminary Amendment).

Dependent claim 169

Dependent claim 169 depends on claim 152 and recites that at least one of the software components comprises means for enabling the software application to communicate over the communication interface (claim 96 of the Preliminary Amendment).

Dependent claim 170

Dependent claim 170 depends on claim 152 and recites that at least one of the software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server (claim 97 of the Preliminary Amendment).

Dependent claim 171

Dependent claim 171 depends on claim 147 and recites that the middleware software provides generic error handlers (claim 98 of the Preliminary Amendment).

Dependent claim 172

Dependent claim 172 depends on claim 147 and recites a network comprising a plurality

of ATMs or kiosks according to Claim 147, wherein configuration data for configuring the ATMs or kiosks is centrally held in a distribution file (page 29, lines 8-14).

Dependent claim 173

Dependent claim 173 depends on claim 150 and recites that the user interface is adapted to be constructed using common web authoring tools (claim 100 of the Preliminary Amendment).

Dependent claim 174

Dependent claim 174 depends on claim 147 and recites that the ATM/kiosk control application runs on a Microsoft Windows NT operating system (claim 101 of the Preliminary Amendment).

Dependent claim 175

Dependent claim 175 depends on claim 147 and recites a network comprising a plurality of ATMs or kiosks, one or more networking means and one or more application servers (claim 102 of the Preliminary Amendment).

Dependent claim 176

Dependent claim 176 depends on claim 175 and recites an Extranet formed by combining a plurality of networks of ATMs or kiosks (claim 103 of the Preliminary Amendment).

Dependent claim 177

Dependent claim 177 depends on claim 176 and recites an Extranet provided with a security mechanism which limits the hardware functionality available to individual software applications (claim 104 of the Preliminary Amendment).

Dependent claim 178

Dependent claim 178 depends on claim 114 and recites that the ATM or kiosk wherein

the ATM or kiosk is operated by a first organization, wherein the ATM/kiosk control application is provided by a second organization, and wherein the software application provides a transaction type different than the transaction type associated with the first organization (claim 105 of the Preliminary Amendment).

Dependent claim 179

Dependent claim 179 depends on claim 114 and recites the step of creating an event thread associated with each software component for insuring that device states persist from a page of the application to another page of the application (page 18, line 23 – page 19, line 3).

Dependent claim 180

Dependent claim 181 depends on claim 114 and recites the step of encapsulating essential software logic of the software component so that an associated user interface is freely defined (page 15, line 30 - page 16, line 4; page 16, lines 10-13; claim 59 of the Preliminary Amendment).

Dependent claim 181

Dependent claim 181 depends on claim 114 and recites a network comprising a plurality of ATMs or kiosks each having at least one device of at least one device type, the at least one device having capabilities, wherein the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a device of the same device type in at least one other of the ATMs or kiosks, and wherein different services are provided for the different device capabilities (page 16, line 27 – page 17, line 3; page 16, lines 6-10).

Dependent claim 182

Dependent claim 182 depends on claim 147 and recites that the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities

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of a device of the same device type in at least one other of the ATMs or kiosks (page 16, line 27 – page 17, line 3; page 16, lines 6-10).

VI. Ground of rejection to be reviewed on appeal.

The ground of rejection for review is the rejection of claims 114-184 under 35 U.S.C. 103(a) as being unpatentable over Hillson et al. in view of Albert et al.

VII. Argument

Background and the invention

The present invention relates to a method for controlling an ATM or kiosk and to an ATM or kiosk itself. As background, the appellant points out that an owner (for example, a bank) of a network of, for example, ATMs has a problem that one or more of the ATMs is likely to include equipment, for example, a cash dispenser, that is different from the corresponding equipment of other ATMs in the network. This situation presents a problem for the application software in the ATMs, which cannot handle the differences, or perhaps can handle the differences only with difficulty. Then, if part of the equipment in an ATM, for example, a card reader, is replaced with a card reader of a different model or a card reader from a different manufacturer, the application software cannot work with the new card reader, and the problem is made worse.

According to the invention, middleware software is provided at the ATM or kiosk for interfacing the application (which is provided at the ATM or kiosk) with the devices (which are provided at the ATM or kiosk). This middleware software has various features that enable the application to operate independently of the particular devices that are provided at the ATM or kiosk.

For various device types, such as card readers, cash dispensers, cash acceptors, keyboards, printers and so on, there are many different variants. The particular hardware devices of any device type can vary according to manufacturer, model number and firmware upgrade versions, so that for any given device type there are in fact many variations that exist between the particular hardware devices of that type.

It is a problem for a software application in an ATM or kiosk to take account of the wide

variations in particular hardware devices within any given device type. The present invention provides additional, middleware software which takes account of these variations and has the ability to interface the application with the devices.

The provision of this middleware software and the provision of this interfacing ability enables the application to be the same in different ATMs or kiosks even if the specific devices, such as hardware devices, are different. The technical features of the claim by which this isolation of functionality is achieved are the “software components” comprised within the middleware. Each software component supports a device type and is suitable for controlling the particular devices of the ATM or kiosk that belong to that device type. A software component can be thought of as embodying all knowledge of the behavior of all known variants of the particular devices of that type. The middleware software therefore has the capability to control the particular devices and also translates the functioning into a form that the application can understand. This amounts to a new method for controlling an ATM or kiosk where the dependence on particular devices is dealt with by the additional, middleware software, rather than having to be dealt with by the ATM/ kiosk software application.

The present invention involves middleware software that cooperates with the application software of the ATMs or kiosks and has the capability of working with various types of equipment, for example, card readers, printers, etc., and with various models of each type of equipment, including models of different manufacturers. The middleware software is able to work with various devices of a given device type, for example, card readers, that have different characteristics from one another. Transaction services provided by transaction objects of the middleware software of the present invention depend on the capabilities of the device, for example, a card reader, so that different transaction services are provided for

different transaction device capabilities. Page 16, lines 6-10 of the application give the following example of this: “For example, an ATM might have a single button which dispenses \$10 on demand. A second ATM might implement more complex controls and display a detailed animation whilst money is issued. However, the same wizard may be used to implement both these ATMs.” As is described at page 15, lines 21-24, wizards are top level components that are a series of transaction objects that implement common ATM/kiosk transactions such as dispensing cash, printing a statement etc. As a result of this feature, the recited middleware enables the ATM to work with various printers and other devices.

The rejection

In making the rejection of claims 114-184 under 35 USC 103 as being obvious over the Hillson et al. reference in view of the Albert et al. reference, the Examiner has failed to make a *prima facie* case of obviousness. Even for the independent claims, the Examiner has not stated where each of the features of the claims are found in the prior art references, but instead has merely concluded that the features are in the references.

Claim 114

Independent method claim 114 recites providing middleware software for interfacing the software application with the at least one device, wherein the middleware software comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to that device type. In this regard, with respect to the software components, the specification recites on page 15, lines 16-24: “The primary subsystems of the middleware software comprise a series of wizards, device controls, self-service controls, communications controls and status monitoring components. The top level components are the wizards, which are a series of transaction objects that implement

common ATM/kiosk transactions such as dispensing cash, printing a statement etc.” In addition, with respect to the ability to interpret capabilities of devices, the specification recites on page 16, lines 27-33: "An additional important feature of the wizards is that they are able to interpret the capabilities of the hardware on which they are run. For example, they may be able to establish whether a cash dispensing means is available. One application may then run on a plurality of different hardware implementations, adapting its functionality to the capabilities of that hardware.”

With respect to independent claim 114, the Examiner has not stated where in the prior art the following can be found: providing an embedded software application at an ATM or kiosk; and controlling within the ATM or kiosk by the software application, through each component of middleware software, devices belonging to the device type that the component is for, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices. Instead, the Examiner has merely stated that Hillson et al. discloses the invention substantially as claimed.

The Examiner acknowledges that the Hillson et al. reference fails to disclose one of the features of claim 114, but contends that it would have been obvious to incorporate teachings of Albert et al. within Hillson et al. in order to overcome that failure. The Examiner specifically acknowledges “...Hillson does not disclose providing middleware software at the ATM or kiosk for interfacing the application with the at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for and controlling within the ATM or kiosk by the software application.” In view of those deficiencies of Hillson et al., the Examiner states, as was just mentioned, that it

would have been obvious to incorporate the teachings of Albert et al. within Hillson et al. in order to overcome those deficiencies.

One clear problem with the incorporation proposed by the Examiner is that Albert et al. does not disclose the claimed subject matter that the Examiner acknowledges is missing from Hillson. More specifically, Albert et al., like Hillson et al., does not disclose providing middleware software at an ATM or kiosk for interfacing an application with at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for and controlling within the ATM or kiosk, by the software application, devices belonging to the device type that the component is for. Thus, even if it were considered obvious to modify Hillson et al. to incorporate teachings of Albert et al., as the Examiner contends, the modified Hillson et al. reference still would not include the claimed features missing from Hillson et al., namely, providing middleware software at an ATM or kiosk for interfacing an application with at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for and controlling within the ATM or kiosk, by the software application, devices belonging to the device type that the component is for.

In the passages of Albert et al. cited by the Examiner as disclosing the feature that the Examiner acknowledges is not disclosed in Hillson et al., column 11, line 38 refers to downloading new programs to a terminal, and column 15, lines 60 and 61 refers to a data frame being indicative of a request for a software update download. However, nothing in Albert et al. discloses the subject matter of the claims of the application that the Examiner acknowledges is

missing from the Hillson reference, namely, providing middleware software at an ATM or kiosk for interfacing the application with the at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for and controlling within the ATM or kiosk by the software application.”. Merely suggesting downloading new programs to a terminal, as Albert et al. discloses, does not, even if combined with Hillson et al., place the public in possession of the idea of providing middleware software at an ATM or kiosk for interfacing an application with at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for and controlling within the ATM or kiosk by the software application devices belonging to the device type that the component is for. Albert et al. does not disclose what is in the programs that are downloaded, and so one of ordinary skill would not obtain from Albert et al. any idea of the concept of providing middleware software at an ATM or kiosk for performing the function recited in the claims, wherein the middleware comprises the features recited in the claims.

The following is the description at column 11, lines 30-40 of Albert et al., the passage of Albert et al. referred to by the Examiner that is treated by the Examiner as being the most pertinent passage: “The phone line connector 240 is also coupled to a ringing generator 244. The ringing generator 244 may be omitted if the terminal 100 does not take its phone line interface 132 into an off-hook state in response to a ringing signal. The ringing signal may be used by the wireless adaptor 200 to initiate a connection between the wireless adaptor 200 and the terminal 100 in cases where the terminal 100 responds to a ringing signal. Such a connection may be

established to download new programs to the terminal 100 via the wireless adaptor 200.”

The passage just quoted does not disclose software, but instead discloses alternative arrangements that can be made of some of the elements of the apparatus of Albert et al. when the Albert et al. apparatus is put together. Such a disclosure is much different from middleware software that has an ability to interpret specific capabilities of a plurality of devices of a given device type. For example, deciding not to have the terminal 100 of Albert et al. take its phone line interface 132 into an off-hook state in response to a ringing signal, and therefore omitting the ringing generator 244, does not constitute, and is not equivalent to, the middleware software of claim 114 that has an ability to interpret specific capabilities of a plurality of devices of a given device type. Furthermore, nowhere in Hillson et al. or Albert et al. is disclosed the related feature of claim 114 of “controlling within the ATM or kiosk by the software application, through each component, devices belonging to the device type that the component is for, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.” Thus, the Examiner has failed to make a *prima facie* case that the method of claim 114 would have been obvious from the combination of Hillson et al. and Albert et al.

Not only do neither of the references disclose at least the claimed feature of providing middleware software at the ATM or kiosk, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for, but also the Examiner has failed to make a *prima facie* case of obviousness. More particularly, the Examiner has failed to make a *prima facie* that it would have been obvious to employ the connections of the phone line connector 240, ringing generator 244, terminal 100

and phone line interface 132 of Albert et al. in the communications services vending apparatus of Hillson et al. Furthermore, the appellant submits that it would not have been obvious. The ground of rejection involving Hillson in view of Albert et al. requires that, without knowledge of the present application, it would have been obvious to one of ordinary skill to incorporate in Hillson et al. the feature of Albert et al. that the Examiner considers to be the middleware software of the claims.

It is submitted that more than a conclusory statement, such as that provided by the Examiner, is needed to set forth a *prima facie* case of obviousness. Instead, some reasoning why the combination of references would have been obvious is required. In this regard, the court in *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006) stated: “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” This recitation by the Federal Circuit was cited with approval by the US Supreme Court in the KSR decision (*KSR Int’l Co. v. Teleflex, Inc.*, 82 USPQ2d 1385 (2007)). Furthermore, the appellant points out that “[T]he initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention rests upon the examiner.” *Ex parte Levy*, 17 USPQ 2d 1461, 1464 (BPAI 1990); *In re Piasecki*, 223 USPQ 785 (Fed. Cir. 1984).

Furthermore, claim 114 clearly calls for each of the elements provided by the method of the claim, namely the application, the devices and the middleware software, all to be provided at the ATM or kiosk and are thus contained within the specific technical field of ATMs or kiosks.

The method according to claim 114 provides additional, middleware software which takes account of these variations and has the ability to interface the application with the devices.

The provision of this middleware software and the provision of this interfacing ability

enables the application to be the same in different ATMs or kiosks even if the specific devices, such as hardware devices, are different. The technical features of the claim by which this isolation of functionality is achieved are the “software components” comprised within the middleware. Each software component supports a device type and is suitable for controlling the particular devices of the ATM or kiosk which belong to that device type. A software component can be thought of as embodying all knowledge of the behavior of all known variants of the particular devices of that type. The middleware software therefore has the capability to control the particular devices and also translates the functioning into a form that the application can understand. This amounts to a new method for controlling an ATM or kiosk where the dependence on particular devices is dealt with by the additional, middleware software, rather than having to be dealt with by the ATM/ kiosk software application.

Thus, it is submitted that independent claim 114 is allowable and that the claims that depend on claim 114 are allowable with it. Accordingly, it is submitted that the rejection of those claims should not be sustained.

Independent claim 147

Features similar to those presented in independent method claim 114 are presented in independent apparatus claim 147. Claim 147 recites: an ATM or kiosk comprising: an embedded software application; at least one device of at least one device type; and middleware software adapted to interface the application with the at least one device, the middleware software comprising a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for, each component being adapted to control devices belonging to the device type that the software component is for within the ATM or kiosk by the

software application, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.

Again, the ATM/kiosk software application, devices and middleware software are all comprised in the ATM or kiosk. The combination of Hillson et al. and Albert et al. does not disclose all of the features of independent claim 147, neither reference disclosing at least the feature of “middleware software comprising a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for, each component being adapted to control devices belonging to the device type that the software component is for within the ATM or kiosk by the software application, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.” Therefore, arguments analogous to those presented above in connection with the rejection of claim 114 and the citation of *In re Kahn* apply here with respect to claim 147.

Independent claim 183

Independent method claim 183 recites: A method for providing transaction services in an ATM or Kiosk comprising: controlling said ATM or Kiosk by at least one software application and an operating system, both of which are installed in the ATM or Kiosk; wherein the at least one software application interacts with said at least one transaction device of said transaction device type through a programming interface of middleware software comprising transaction objects providing transaction services; and wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities

different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.

Again, the ATM/kiosk software application, devices and middleware software are provided in the ATM or kiosk. The quoted section of independent claim 183 relates to the ability of the middleware software to work with various devices of a given device type, for example, card readers, having different characteristics from one another. It recites that the transaction services provided by the transaction objects of the middleware software of the present invention depend on the capabilities of the device, for example, a card reader, with different transaction services being provided for different transaction device capabilities. This recitation of the last section is not disclosed by either Hillson et al. or Albert et al.

The combination of Hillson et al. and Albert et al. does not disclose all of the features of independent claim 183, neither reference disclosing at least the feature of “the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.” Therefore, arguments analogous to those presented above in connection with the patentability of claim 114 and the citation of *In re Kahn* apply here with respect to claim 183.

Independent claim 184

Independent claim 184 recites: an ATM or Kiosk comprising, among other features, a programming interface of middleware software through which at least one software application

and an operating system control and receive information from at least one transaction device type, wherein the programming interface of middleware software comprises transaction objects providing transaction services, wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.

Again, the software application, devices and middleware software are in the ATM or kiosk. The quoted section of independent claim 184 relates to the ability of the middleware software to work with various devices of a given device type, for example, card readers, having different characteristics from one another. It recites that the transaction services provided by the transaction objects of the middleware software of the present invention depend on the capabilities of the device, for example, a card reader, with different transaction services being provided for different transaction device capabilities. This recitation of the last section is not disclosed by either Hillson et al. or Albert et al.

The combination of Hillson et al. and Albert et al. does not disclose all of the features of independent claim 184, neither reference disclosing at least the feature of “a programming interface of middleware software through which the at least one software application and the operating system control and receive information from said at least one transaction device type, wherein the programming interface of middleware software comprises transaction objects providing transaction services, wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to

provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.”

Therefore, arguments analogous to those presented above in connection with the patentability of claim 114 and the citation of *In re Kahn* apply here with respect to claim 184.

The dependent claims

The appellant points out that the Examiner has not pointed out where any of the features of any of the dependent claims are found in either of the references applied in the final rejection. The Examiner has not even explicitly stated that any of the features of any of the dependent claims are found in either of the references applied in the final rejection. It is only by the fact that the dependent claims are rejected on the basis of the two references that there is an implication that the Examiner has determined that all of the features of all of the dependent claims are found in one of the references. Not only does the Examiner fail to point out where in the references each of the features of the dependent claims is found, but in the case of features of the dependent claims that are not found in Hillson et al., the Examiner has failed to make a *prima facie* case that it would have been obvious to employ such features in the system of Hillson et al. Thus, the Examiner has not established a *prima facie* case of obviousness for any of the claims. It is submitted that more than a conclusory statement, such as that provided by the Examiner, is needed to set forth a *prima facie* case of obviousness. Instead, some reasoning why the combination of references would have been obvious is required. In this regard, the court’s statement in *In re Kahn* applies here: “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some

rational underpinning to support the legal conclusion of obviousness.”

The argument above applies to each dependent claim. However, instead of repeating the argument numerous times, with each dependent claim individually, the appellant provides a subheading for each dependent claim, and states here that the argument above applies to each of them.

Dependent claim 115

Dependent claim 115 depends on claim 114 and recites providing the ATM or kiosk with a data communications interface over which said ATM or kiosk communicates (page 11, lines 2-4; claim 35 of the Preliminary Amendment filed with the original US application papers).

Dependent claim 116

Dependent claim 116 depends on claim 114 and recites that the software component is for performing standardized device functions (claim 37 of the Preliminary Amendment).

Dependent claim 117

Dependent claim 117 depends on claim 116 and recites providing the ATM or kiosk with a customizable user interface (claim 38 of the Preliminary Amendment).

Dependent claim 118

Dependent claim 118 depends on claim 117 and recites that the software component is independent of the user interface (claim 39 of the Preliminary Amendment).

Dependent claim 119

Dependent claim 119 depends on claim 118 and recites providing the ATM or kiosk with a plurality of software components, at least one of which comprises a capabilities interface (claim 40 of the Preliminary Amendment).

Dependent claim 120

Dependent claim 120 depends on claim 119 and recites that the capabilities interface communicates the capabilities of the software component (claim 41 of the Preliminary Amendment).

Dependent claim 121

Dependent claim 121 depends on claim 119 and recites that the application and the software components are concurrently operable (claim 42 of the Preliminary Amendment).

Dependent claim 122

Dependent claim 122 depends on claim 116 and recites that the software component is constructed with an event generating capability and that the software component is operable in a selectable mode in which events are queued up and delivered to the application on demand (claim 43 of the Preliminary Amendment).

Dependent claim 123

Dependent claim 123 depends on claim 114 and recites that the middleware software provides service in accordance with at least one software standard for interacting with different hardware systems (claim 44 of the Preliminary Amendment).

Dependent claim 124

Dependent claim 124 depends on claim 123 and recites that the at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND®, ActiveX®, Javabeans, SNMP (claim 45 of the Preliminary Amendment).

Dependent claim 125

Dependent claim 125 depends on claim 114 and recites that all errors and transgressions are asserted by the middleware software (claim 46 of the Preliminary Amendment).

Dependent claim 126

Dependent claim 126 depends on claim 114 and recites the step of the middleware software writing trace data to memory and then copying the trace data to disk only when the ATM or kiosk is idle (claim 47 of the Preliminary Amendment).

Dependent claim 127

Dependent claim 127 depends on claim 114 and recites providing the ATM or kiosk with a web browser (claim 48 of the Preliminary Amendment).

Dependent claim 128

Dependent claim 128 depends on claim 127 and recites that the ATM/kiosk control application is operable from within the environment of said web browser (claim 49 of the Preliminary Amendment).

Dependent claim 129

Dependent claim 129 depends on claim 128 and recites that the web browser provides support for software distribution (claim 50 of the Preliminary Amendment).

Dependent claim 130

Dependent claim 130 depends on claim 128 and recites that the at least one software component is contained in a web browser frame provided at the ATM or kiosk and that the at least one software component is operable to detect events which must be responded to upon occurrence (claim 51 of the Preliminary Amendment).

Dependent claim 131

Dependent claim 131 depends on claim 127 and recites that the middleware software comprises a plurality of COM components having a scriptable ActiveX® interface (claim 52 of the Preliminary Amendment).

Dependent claim 132

Dependent claim 132 depends on claim 127 and recites that the middleware software comprises a plurality of JavabeansTM components having a scriptable interface (claim 53 of the Preliminary Amendment).

Dependent claim 133

Dependent claim 133 depends on claim 127 and recites that the web browser communicates with conventional web sites to be displayed by the ATM or kiosk (claim 54 of the Preliminary Amendment).

Dependent claim 134

Dependent claim 134 depends on claim 127 and recites that the middleware software allows or disallows access to particular web sites according to a rule database (claim 55 of the Preliminary Amendment).

Dependent claim 135

Dependent claim 135 depends on claim 127 and recites that the middleware software customizes time-out of the display of individual internet web sites (claim 56 of the Preliminary Amendment).

Dependent claim 136

Dependent claim 136 depends on claim 114 and recites that the ATM or kiosk enables the software application and middleware to be altered across a network by an authority (claim 57 of the Preliminary Amendment).

Dependent claim 137

Dependent claim 137 depends on claim 114 and recites that the ATM or kiosk communicates status information to a remote station (claim 58 of the Preliminary Amendment).

Dependent claim 138

Dependent claim 138 depends on claim 114 and recites that the at least one software component encapsulates software logic required for performing at least a portion of a transaction (claim 59 of the Preliminary Amendment).

Dependent claim 139

Dependent claim 139 depends on claim 114 and recites that the at least one software component provides abstraction of details of a device controlled by said software component (claim 60 of the Preliminary Amendment).

Dependent claim 140

Dependent claim 140 depends on claim 114 and recites the step of creating a separate thread for each of a plurality of software components (claim 61 of the Preliminary Amendment).

Dependent claim 141

Dependent claim 141 depends on claim 115 and recites the step of enabling the software application to communicate over the communications interface through a software component (claim 62 of the Preliminary Amendment).

Dependent claim 142

Dependent claim 142 depends on claim 116 and recites that the at least one of said software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server (claim 63 of the Preliminary Amendment).

Dependent claim 143

Dependent claim 143 depends on claim 114 and recites that the middleware software provides generic error handlers (claim 64 of the Preliminary Amendment).

Dependent claim 144

Dependent claim 144 depends on claim 115 and recites configuring a plurality of ATMs or kiosks, and wherein configuration data for said step of configuring is centrally held in a distribution file (claim 65 of the Preliminary Amendment).

Dependent claim 145

Dependent claim 145 depends on claim 117 and recites the step of constructing the user interface using common web authoring tools (claim 66 of the Preliminary Amendment).

Dependent claim 146

Dependent claim 146 depends on claim 114 and recites that the software application runs on a Microsoft Windows NT operating system (claim 67 of the Preliminary Amendment).

Dependent claim 148

Dependent claim 148 depends on claim 147 and recites a data communications interface wherein the ATM or Kiosk is adapted to communicate over the data communications interface (claim 69 of the Preliminary Amendment).

Dependent claim 149

Dependent claim 149 depends on claim 147 and recites that the software components are for performing standardized device functions (claim 71 of the Preliminary Amendment).

Dependent claim 150

Dependent claim 150 depends on claim 149 and recites a customizable user interface (claim 72 of the Preliminary Amendment).

Dependent claim 151

Dependent claim 151 depends on claim 150 and recites that the software components are independent of the user interface (claim 73 of the Preliminary Amendment).

Dependent claim 152

Dependent claim 152 depends on claim 151 and recites a plurality of software components, at least one of which comprises a capabilities interface (claim 74 of the Preliminary Amendment).

Dependent claim 153

Dependent claim 153 depends on claim 152 and recites that the capabilities interface can communicate the capabilities of the software component (claim 75 of the Preliminary Amendment).

Dependent claim 154

Dependent claim 154 depends on claim 152 and recites that the software application and the software components are concurrently operable (claim 76 of the Preliminary Amendment).

Dependent claim 155

Dependent claim 155 depends on claim 147 and recites that the software component is constructed with an event generating capability and that the software component is operable in a selectable mode in which events are queued up and delivered to the application on demand (claim 77 of the Preliminary Amendment).

Dependent claim 156

Dependent claim 156 depends on claim 147 and recites that the middleware software is adapted to provide service in accordance with at least one software standard for interacting with different hardware systems (claim 78 of the Preliminary Amendment).

Dependent claim 157

Dependent claim 157 depends on claim 156 and recites that the at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND, ActiveX®,

Javabeans, SNMP (claim 79 of the Preliminary Amendment).

Dependent claim 158

Dependent claim 158 depends on claim 147 and recites that the ATM/kiosk control application is operable from within a web browser environment (claim 83 of the Preliminary Amendment).

Dependent claim 159

Dependent claim 159 depends on claim 158 and recites that a web browser provides support for software distribution (claim 84 of the Preliminary Amendment).

Dependent claim 160

Dependent claim 160 depends on claim 158 and recites a web browser frame containing at least one software component operable to detect events which must be responded to upon occurrence (claim 85 of the Preliminary Amendment).

Dependent claim 161

Dependent claim 161 depends on claim 147 and recites that the middleware software comprises a plurality of COM components having a scriptable ActiveX® interface (claim 86 of the Preliminary Amendment).

Dependent claim 162

Dependent claim 162 depends on claim 147 and recites that the middleware software comprises a plurality of Javabeans™ components having a scriptable interface (claim 87 of the Preliminary Amendment).

Dependent claim 163

Dependent claim 163 depends on claim 147 and recites a web browser adapted to communicate with conventional web sites to be displayed by the ATM or Kiosk (claim 88 of the

Preliminary Amendment).

Dependent claim 164

Dependent claim 164 depends on claim 147 and recites that the ATM or kiosk is adapted to allow the ATM/kiosk software application and middleware to be altered across a network by an authority (claim 91 of the Preliminary Amendment).

Dependent claim 165

Dependent claim 165 depends on claim 147 and recites that the ATM or kiosk is adapted to communicate status information to a remote station (claim 92 of the Preliminary Amendment).

Dependent claim 166

Dependent claim 166 depends on claim 147 and recites that the at least one software component encapsulates software logic required for performing at least a portion of a transaction (claim 93 of the Preliminary Amendment).

Dependent claim 167

Dependent claim 167 depends on claim 152 and recites that the at least one software component provides abstraction of details of a device controlled by said software component (claim 94 of the Preliminary Amendment).

Dependent claim 168

Dependent claim 168 depends on claim 152 and recites that each of a plurality of the software components comprises means for creating a separate thread (claim 95 of the Preliminary Amendment).

Dependent claim 169

Dependent claim 169 depends on claim 152 and recites that at least one of the software components comprises means for enabling the software application to communicate over the

communication interface (claim 96 of the Preliminary Amendment).

Dependent claim 170

Dependent claim 170 depends on claim 152 and recites that at least one of the software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server (claim 97 of the Preliminary Amendment).

Dependent claim 171

Dependent claim 171 depends on claim 147 and recites that the middleware software provides generic error handlers (claim 98 of the Preliminary Amendment).

Dependent claim 172

Dependent claim 172 depends on claim 147 and recites a network comprising a plurality of ATMs or kiosks according to Claim 147, wherein configuration data for configuring the ATMs or kiosks is centrally held in a distribution file (page 29, lines 8-14).

Dependent claim 173

Dependent claim 173 depends on claim 150 and recites that the user interface is adapted to be constructed using common web authoring tools (claim 100 of the Preliminary Amendment).

Dependent claim 174

Dependent claim 174 depends on claim 147 and recites that the ATM/kiosk control application runs on a Microsoft Windows NT operating system (claim 101 of the Preliminary Amendment).

Dependent claim 175

Dependent claim 175 depends on claim 147 and recites a network comprising a plurality of ATMs or kiosks, one or more networking means and one or more application servers (claim

102 of the Preliminary Amendment).

Dependent claim 176

Dependent claim 176 depends on claim 175 and recites an Extranet formed by combining a plurality of networks of ATMs or kiosks (claim 103 of the Preliminary Amendment).

Dependent claim 177

Dependent claim 177 depends on claim 176 and recites an Extranet provided with a security mechanism which limits the hardware functionality available to individual software applications (claim 104 of the Preliminary Amendment).

Dependent claim 178

Dependent claim 178 depends on claim 114 and recites that the ATM or kiosk wherein the ATM or kiosk is operated by a first organization, wherein the ATM/kiosk control application is provided by a second organization, and wherein the software application provides a transaction type different than the transaction type associated with the first organization (claim 105 of the Preliminary Amendment).

Dependent claim 179

Dependent claim 179 depends on claim 114 and recites the step of creating an event thread associated with each software component for insuring that device states persist from a page of the application to another page of the application (page 18, line 23 – page 19, line 3).

Dependent claim 180

Dependent claim 181 depends on claim 114 and recites the step of encapsulating essential software logic of the software component so that an associated user interface is freely defined (page 15, line 30 - page 16, line 4; page 16, lines 10-13; claim 59 of the Preliminary Amendment).

Dependent claim 181

Dependent claim 181 depends on claim 114 and recites a network comprising a plurality of ATMs or kiosks each having at least one device of at least one device type, the at least one device having capabilities, wherein the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a device of the same device type in at least one other of the ATMs or kiosks, and wherein different services are provided for the different device capabilities (page 16, line 27 – page 17, line 3; page 16, lines 6-10).

Dependent claim 182

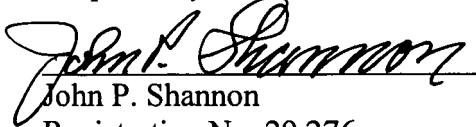
Dependent claim 182 depends on claim 147 and recites that the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a device of the same device type in at least one other of the ATMs or kiosks (page 16, line 27 – page 17, line 3; page 16, lines 6-10).

VIII. CONCLUSION

For the foregoing reasons, the Examiner's rejections of claims 114-184 should not be sustained. A decision to that effect is respectfully requested.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0562.

Date: 7-7-09

Respectfully submitted,

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John P. Shannon

VIII. Claims appendix.

114. A method for controlling an ATM or kiosk, comprising the steps of:

providing an embedded software application at the ATM or kiosk;

providing at least one device of at least one device type at the ATM or kiosk;

providing middleware software at the ATM or kiosk for interfacing the application with the at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for; and

controlling within the ATM or kiosk by the software application, through each component, devices belonging to the device type that the component is for, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.

115. The method of Claim 114, further comprising providing said ATM or kiosk with a data communications interface over which said ATM or kiosk communicates.

116. A method for controlling an ATM or kiosk according to Claim 114 wherein the software component is for performing standardized device functions.

117. A method for controlling an ATM or kiosk according to Claim 116, further comprising providing said ATM or kiosk with a customizable user interface.

118. A method for controlling an ATM or kiosk according to Claim 117 wherein said

software component is independent of said user interface.

119. A method for controlling an ATM or kiosk according to Claim 118, further comprising providing said ATM or kiosk with a plurality of software components, at least one of which comprises a capabilities interface.

120. A method for controlling an ATM or kiosk according to Claim 119 wherein the capabilities interface communicates the capabilities of the software component.

121. A method for controlling an ATM or kiosk according to Claim 119 wherein the application and the software components are concurrently operable.

122. A method for controlling an ATM or kiosk according to Claim 116 wherein the software component is constructed with an event generating capability and wherein said software component is operable in a selectable mode in which events are queued up and delivered to the application on demand.

123. A method for controlling an ATM or kiosk according to Claim 114 wherein said middleware software provides service in accordance with at least one software standard for interacting with different hardware systems.

124. A method for controlling an ATM or kiosk according to Claim 123 wherein said at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX,

TOPEND®, ActiveX®, Javabeans, SNMP.

125. A method for controlling an ATM or kiosk according to Claim 114 wherein all errors and transgressions are asserted by the middleware software.

126. A method for controlling an ATM or kiosk according to Claim 114 further comprising the step of the middleware software writing trace data to memory and then copying the trace data to disk only when the ATM or kiosk is idle.

127. A method for controlling an ATM or kiosk according to Claim 114 further comprising providing said ATM or kiosk with a web browser.

128. A method for controlling an ATM or kiosk according to Claim 127 where said ATM/kiosk control application is operable from within the environment of said web browser.

129. A method for controlling an ATM or kiosk according to Claim 128 wherein said web browser provides support for software distribution.

130. A method for controlling an ATM or kiosk according to Claim 128 wherein said at least one software component is contained in a web browser frame provided at said ATM or kiosk and wherein said at least one software component is operable to detect events which must be responded to upon occurrence.

131. A method for controlling an ATM or kiosk according to Claim 127 wherein said middleware software comprises a plurality of COM components having a scriptable ActiveX® interface.

132. A method for controlling an ATM or kiosk according to Claim 127 wherein said middleware software comprises a plurality of Javabeans™ components having a scriptable interface.

133. A method for controlling an ATM or kiosk according to Claim 127 wherein said web browser communicates with conventional web sites to be displayed by the ATM or kiosk.

134. A method for controlling an ATM or kiosk according to Claim 127 wherein the middleware software allows or disallows access to particular web sites according to a rule database.

135. A method for controlling an ATM or kiosk according to Claim 127 wherein the middleware software customizes time-out of the display of individual internet web sites.

136. A method for controlling an ATM or kiosk according to Claim 114 wherein the ATM or kiosk enables the software application and middleware to be altered across a network by an authority.

137. A method for controlling an ATM or kiosk according to Claim 114 wherein the

ATM or kiosk communicates status information to a remote station.

138. A method for controlling an ATM or kiosk according to Claim 114 wherein said at least one software component encapsulates software logic required for performing at least a portion of a transaction.

139. A method for controlling an ATM or kiosk according to Claim 114 wherein said at least one software component provides abstraction of details of a device controlled by said software component.

140. A method for controlling an ATM or kiosk according to Claim 114 further comprising the step of creating a separate thread for each of a plurality of software components.

141. A method for controlling an ATM or kiosk according to Claim 115 further comprising the step of enabling said software application to communicate over said communications interface through a software component.

142. A method for controlling an ATM or kiosk according to Claim 116 wherein at least one of said software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server.

143. A method for controlling an ATM or kiosk according to Claim 114 wherein said middleware software provides generic error handlers.

144. A method for controlling an ATM or kiosk according to Claim 115 further comprising configuring a plurality of ATMs or kiosks, and wherein configuration data for said step of configuring is centrally held in a distribution file.

145. A method for controlling an ATM or kiosk according to Claim 117 further comprising the step of constructing said user interface using common web authoring tools.

146. A method for controlling an ATM or kiosk according to Claim 114 wherein said software application runs on a Microsoft Windows NT operating system.

147. An ATM or kiosk comprising:
an embedded software application;
at least one device of at least one device type; and
middleware software adapted to interface the application with the at least one device,
the middleware software comprising a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for, each component being adapted to control devices belonging to the device type that the software component is for within the ATM or kiosk by the software application, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.

148. The ATM or kiosk of Claim 147 further comprising a data communications interface and wherein said ATM or Kiosk is adapted to communicate over said data communications interface.

149. The ATM or kiosk of Claim 147 wherein the software components are for performing standardized device functions.

150. The ATM or kiosk of Claim 149, comprising a customizable user interface.

151. The ATM or kiosk of Claim 150 wherein said software components are independent of said user interface.

152. The ATM or kiosk of Claim 151 further comprising a plurality of software components, at least one of which comprises a capabilities interface.

153. The ATM or kiosk of Claim 152 wherein the capabilities interface can communicate the capabilities of the software component.

154. The ATM or kiosk of Claim 152 wherein the software application and the software components are concurrently operable.

155. The ATM or kiosk of Claim 147 wherein said software component is constructed with an event generating capability and wherein said software component is operable in a

selectable mode in which events are queued up and delivered to the application on demand.

156. The ATM or kiosk according to Claim 147 wherein said middleware software is adapted to provide service in accordance with at least one software standard for interacting with different hardware systems.

157. The ATM or kiosk according to Claim 156 wherein said at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND, ActiveX®, Javabeans, SNMP.

158. The ATM or kiosk of Claim 147 wherein said ATM/kiosk control application is operable from within a web browser environment.

159. The ATM or kiosk of Claim 158 wherein a web browser provides support for software distribution.

160. The ATM or kiosk of Claim 158 further comprising a web browser frame containing at least one software component operable to detect events which must be responded to upon occurrence.

161. The ATM or kiosk of Claim 147 wherein said middleware software comprises a plurality of COM components having a scriptable ActiveX® interface.

162. The ATM or kiosk of Claim 147 wherein said middleware software comprises a plurality of JavabeansTM components having a scriptable interface.

163. The ATM or kiosk of Claim 147 wherein a web browser is adapted to communicate with conventional web sites to be displayed by the ATM or Kiosk.

164. The ATM or kiosk of claim 147, adapted to allow the ATM/kiosk software application and middleware to be altered across a network by an authority.

165. The ATM or kiosk of claim 147, adapted to communicate status information to a remote station.

166. The ATM or Kiosk of claim 147 wherein said at least one software component encapsulates software logic required for performing at least a portion of a transaction.

167. The ATM or Kiosk of claim 152 wherein said at least one software component provides abstraction of details of a device controlled by said software component.

168. The ATM or kiosk of claim 152 wherein each of a plurality of the software components comprises means for creating a separate thread.

169. The ATM or kiosk of claim 152, wherein at least one of the software components comprises means for enabling said software application to communicate over said

communication interface.

170. The ATM or kiosk of claim 152 wherein at least one of said software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server.

171. The ATM or kiosk of Claim 147 wherein said middleware software provides generic error handlers.

172. A network comprising a plurality of ATMs or kiosks according to Claim 147, wherein configuration data for configuring the ATMs or kiosks is centrally held in a distribution file.

173. The ATM or kiosk of Claim 150, wherein said user interface is adapted to be constructed using common web authoring tools.

174. The ATM or kiosk of Claim 147 wherein said ATM/kiosk control application runs on a Microsoft Windows NT operating system.

175. A network comprising a plurality of ATMs or kiosks according to Claim 147, one or more networking means and one or more application servers.

176. An Extranet formed by combining a plurality of networks of ATMs or kiosks

according to Claim 175.

177. An Extranet according to Claim 176 provided with a security mechanism which limits the hardware functionality available to individual software applications.

178. A method for controlling an ATM or kiosk according to claim 114 wherein said ATM or kiosk is operated by a first organization, wherein said ATM/kiosk control application is provided by a second organization, and wherein said software application provides a transaction type different than the transaction type associated with said first organization.

179. A method for providing transaction services according to Claim 114, further comprising the step of creating an event thread associated with each software component for insuring that device states persist from a page of the application to another page of the application.

180. A method for controlling an ATM or kiosk according to Claim 114, further comprising the step of encapsulating essential software logic of the software component so that an associated user interface is freely defined.

181. A method for controlling an ATM or kiosk according to Claim 114 in a network comprising a plurality of ATMs or kiosks each having at least one device of at least one device type, the at least one device having capabilities, wherein the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a

device of the same device type in at least one other of the ATMs or kiosks, and wherein different services are provided for the different device capabilities.

182. A network comprising a plurality of the ATMs or kiosks according to Claim 147, wherein the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a device of the same device type in at least one other of the ATMs or kiosks.

183. A method for providing transaction services in an ATM or Kiosk having at least one transaction device of at least one transaction device type, the at least one transaction device having capabilities, comprising the steps of:

controlling said ATM or Kiosk by at least one software application and an operating system, both of which are installed in the ATM or Kiosk;

wherein the at least one software application interacts with said at least one transaction device of said transaction device type through a programming interface of middleware software comprising transaction objects providing transaction services; and

wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction

services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.

184. An ATM or Kiosk comprising

- at least one transaction device of at least one transaction device type;
- at least one software application and an operating system installed in the ATM or Kiosk, the at least one software application and the operating system controlling and receiving information from said at least one transaction device type;
- a programming interface of middleware software through which the at least one software application and the operating system control and receive information from said at least one transaction device type, wherein the programming interface of middleware software comprises transaction objects providing transaction services, wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.

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IX. Evidence appendix.

None.

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X. Related proceedings appendix.

None.